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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,881	07/16/2003	Davorin David Hrovat	FGT 1685 PA	9092

7590 12/02/2004

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EXAMINER

GIBSON, ERIC M

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/620,881

Applicant(s)

HROVAT ET AL.

Examiner

Eric M Gibson

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-20 and 26-28 is/are allowed.
- 6) ☒ Claim(s) 1, 15, 21, 24 and 25 is/are rejected.
- 7) ☒ Claim(s) 2-14, 16, 22 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4/19/04; 3/8/04; 10/29/03; 8/28/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 25 contains information contained in parenthesis at lines 7-9. This renders the claim indefinite because it is not known whether or not the parenthetical information is intended to be a further limitation included in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 15, 21, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Aga et al. (US2002/0087235A1).

a. Per claim 1, Aga teaches a method for detecting a roll rate sensor fault including generating a reference roll angle, generating a roll rate sensor signal, comparing the reference roll angle to the roll rate sensor signal, and generating a

Art Unit: 3661

sensor fault signal in response to comparing the reference roll angle to the roll rate sensor signal (page 6, [0078]).

b. Per claim 15, Aga teaches shutting down the safety system in response to a roll rate sensor fault (pages 3-4, [0052]).

c. Per claim 21, Aga teaches a control system including a sensor cluster (21-24, figure 1), a roll rate sensor (22, figure 1), and a controller adapted to receive the roll rate sensor signal and generate a reference roll angle, compare the reference roll angle to the roll rate sensor signal, and generate a sensor fault signal (page 6, [0078]).

d. Per claim 24, Aga teaches shutting down the safety system in response to a roll rate sensor fault (pages 3-4, [0052]).

Allowable Subject Matter

3. Claims 17-20 and 26-28 are allowed.

a. Per independent claim 17, the prior art does not disclose or reasonably suggest in combination the method for detecting a roll rate sensor fault including compensating the roll rate sensor signal for all valid signal biases and comparing the reference roll angle to the roll rate sensor signal through a kinematics relation and a dynamic interaction related by a vehicle suspension as claimed.

b. Claims 18-20 serve to further define the invention of claim 17 over the prior art.

c. Per independent claim 26, the prior art does not disclose or reasonably suggest in combination the method for detecting a vehicle-dynamic sensor fault

Art Unit: 3661

including compensating for a valid signal bias in the sensor by adjusting a mechanical long term sensor alignment angle with a minute adjustment at each sampling time during a vehicle operation as claimed.

d. Claims 27 and 28 serve to further define the invention of claim 26 over the prior art.

4. Claims 2-14, 16, 22, and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

a. Per claim 2, the prior art does not disclose or reasonably suggest in combination the method for detecting a roll rate sensor fault including compensating the roll rate sensor signal for all valid signal biases as claimed.

b. Claims 3-5 would serve to further define the invention of claim 2 over the prior art.

c. Per claim 6, the prior art does not disclose or reasonably suggest in combination the method for detecting a roll rate sensor fault including wherein generating the reference roll angle further includes sensing at least one of lateral acceleration, yaw rate, vehicle longitudinal speed, vehicle roll angle, wheel speed, or a GPS as claimed.

d. Per claim 7, the prior art does not disclose or reasonably suggest in combination the method for detecting a roll rate sensor fault including refining the reference roll angle through steering wheel angle information to reduce a negligence error of a lateral velocity derivative as claimed.

Art Unit: 3661

e. Per claim 8, the prior art does not disclose or reasonably suggest in combination the method for detecting a roll rate sensor fault including refining the reference roll angle with calculation of a dynamic relation between vehicle lateral acceleration and a suspension roll motion as claimed.

f. Per claim 9, the prior art does not disclose or reasonably suggest in combination the method for detecting a roll rate sensor fault including wherein comparing the reference angle to the roll rate sensor signal includes comparing low pass filter version of a derivative of the reference angle with the roll rate sensor signal as claimed.

g. Per claim 10, the prior art does not disclose or reasonably suggest in combination the method for detecting a roll rate sensor fault including wherein comparing the reference roll angle to the roll rate sensor signal includes comparing a high pass filtered reference roll angle with a high pass filtered version of an integration of the roll rate sensor signal as claimed.

h. Per claim 11, the prior art does not disclose or reasonably suggest in combination the method for detecting a roll rate sensor fault including wherein comparing the reference angle to the rate sensor signal includes comparing the reference roll angle and the roll rate sensor signal through building a filter utilizing both a suspension dynamics and kinematics relationship between roll angle and roll rate as claimed.

i. Per claim 12, the prior art does not disclose or reasonably suggest in combination the method for detecting a roll rate sensor fault including wherein

Art Unit: 3661

comparing the reference roll angle to the roll rate sensor signal includes comparing the reference roll angle to the roll rate sensor signal through an observer that utilizes a kinematics relation and a dynamics relation as claimed.

j. Per claim 13, the prior art does not disclose or reasonably suggest in combination the method for detecting a roll rate sensor fault including wherein comparing the reference roll angle to the roll rate sensor signal further includes utilizing generating a dynamic bias estimate with a logic having the vehicle roll rate signal averaging to zero over a long period of time as claimed.

k. Per claim 14, the prior art does not disclose or reasonably suggest in combination the method for detecting a roll rate sensor fault including wherein generating the roll rate sensor fault signal further includes generating a lateral acceleration signal, filtering the lateral acceleration signal, generating a filtered lateral acceleration signal, high pass filtering the roll rate sensor signal, generating a filtered roll rate sensor signal, and comparing the filtered lateral acceleration signal to the filtered roll rate sensor signal as claimed.

l. Per claim 16, the prior art does not disclose or reasonably suggest in combination the method for detecting a roll rate sensor fault including generating a substitute signal for the roll rate signal in response to roll rate sensor fault as claimed. Per claim 22, the prior art does not disclose or reasonably suggest in combination the system including wherein the controller further adapted to compensate the roll rate sensor signal for all valid signal biases as claimed.

Art Unit: 3661

m. Per claim 23, the prior art does not disclose or reasonably suggest in combination the system including wherein the controller is further adapted to refine the reference angle through steering wheel angle information as claimed.

5. Claim 25 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

a. Per claim 25, the prior art does not disclose or reasonably suggest in combination the system including wherein the controller is further adapted to generate a substitute roll rate signal from sensor signals from at least one of a lateral accelerometer, a longitudinal accelerometer, a vertical accelerometer, a yaw rate sensor, a pitch rate sensor, a wheel speed sensor, a steering angle sensor, or a steering angle position sensor as claimed.

Conclusion

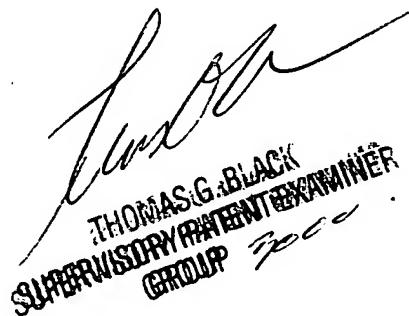
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric M Gibson whose telephone number is (703) 306-4545. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (703) 305-8233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3661

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EMG



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